



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Sean M. Kerwin et al.

Serial No.: 10/775,818

Filed: February 10, 2004

For: INHIBITION OF HUMAN TELOMERASE  
BY A G-QUADRUPLEX-INTERACTION  
COMPOUND

Group Art Unit: 1625

Examiner: Unknown

Atty. Dkt. No.: USB:679USC2

CERTIFICATE OF MAILING  
37 C.F.R 1.8

I certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

October 20, 2004

Date

Michael R. Krawzenek

INFORMATION DISCLOSURE STATEMENT

**MS AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record.

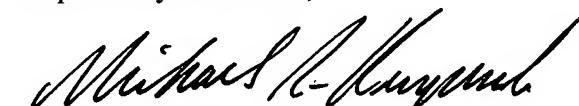
In accordance with 37 C.F.R. §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/UTSB:679USC2.

This application is a continuation application of Serial No. 09/730,893, filed December 5, 2000, now issued as patent no. 6,689,887, which is a divisional of Serial No. 09/244,675, filed February 4, 1999 and is relied upon for an earlier filing date under 35 U.S.C. § 120. In accordance with Rule 37 C.F.R. § 1.98(d) copies of the listed documents are not enclosed as they have been previously cited by or submitted to the Patent and Trademark Office in prior application Serial No. 09/244,675.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



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Date: October 20, 2004

Form PTO-1449 (modified)

Atty. Docket No.

Serial No.

UTSB:679USC2

10/775,818

List of Patents and Publications for Applicant's

Applicant

Sean M. Kerwin et al.

INFORMATION DISCLOSURE STATEMENT

Filing Date:

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(Use several sheets if necessary)

February 10, 2004

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U.S. Patent Documents

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Foreign Patent Documents

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Other Art

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**U.S. Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.

**Foreign Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No

**Other Art (Including Author, Title, Date Pertinent Pages, Etc.)**

Exam. Init.	Ref. Des.	Citation
	C1	Agbandje <i>et al.</i> , "Anthracene-9,10-diones as potential anticancer agents. Synthesis, DNA binding, and biological studies on a series of 2,6-disubstituted derivatives," <i>Med. Chem.</i> , 35:1418-1429, 1992.
	C2	Broccoli <i>et al.</i> , "Telomerase activity in normal and malignant hematopoietic cells," <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 92:9082-9086, 1995.
	C3	Chen <i>et al.</i> , "Spectroscopic recognition of guanine dimeric hairpin quadruplexes by a carbocyanine dye," <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 93:2635-2639, 1996.
	C4	Chung <i>et al.</i> , "p-Quinone methides as geometric analogues of quinolone carboxylate antibacterials," <i>Bioorganic &amp; Medicinal Chem. Letters</i> , 6(12):1309-1312, 1996.
	C5	Collier <i>et al.</i> , "Synthesis, molecular modeling, DNA binding, and antitumor properties of some substituted amidoanthraquinones," <i>Med. Chem.</i> , 31:847-857, 1988
	C6	Ebisuno <i>et al.</i> , "The cytotoxic effects of fleroxacin and ciprofloxacin on transitional cell carcinoma in vitro," <i>Cancer</i> , 80(12):2263-2267, 1997.
	C7	Fedoroff <i>et al.</i> , "NMR-based model of a telomerase-inhibiting compound bound to G-quadruplex DNA," <i>Biochemistry</i> , 37(36):12367-12374, 1998.
	C8	Fox <i>et al.</i> , "A molecular anchor for stabilizing triple-helical DNA," <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 92:7887-7891, 1995.

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EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C9	Greider <i>et al.</i> , "Identification of a specific telomere terminal transferase activity in <i>Tetrahymena</i> extracts," <i>Cell</i> , 43(2Pt1):405-413, 1995.
	C10	Grootenhuis <i>et al.</i> , "Finding potential DNA-binding compounds by using molecular shape," ABSTRACT, <i>J. Comput. Aided Mol. Des.</i> , 8(6):731-750, Dec, 1994.
	C11	Haq <i>et al.</i> , "Molecular anchoring of duplex and triplex DNA by disubstituted anthracene-9/10-diones: calorimetric, UV melting, and competition dialysis studies," <i>J. Am. Chem. Soc.</i> , 118:10693-10701, 1996.
	C12	Hertzberg and Johnson, "Antineoplastic Agents," <i>In: Annual Reports in Medicinal Chemistry</i> , Plattner (ed.) 18:167-176, 1993.
	C13	Hsiung <i>et al.</i> , "A mutation in yeast <i>TOP2</i> homologous to a quinolone-resistant mutation in bacteria," <i>The J. of Biol. Chem.</i> , 270(35):20359-20364, 1995.
	C14	Izicka <i>et al.</i> , "Effects of cationic porphyrins as G-quadruplex interactive agents in human tumor cells," <i>Cancer Res</i> , 59(3):639-644, 1999.
	C15	Kaufman and Hancock, "Topoisomerase II as a target for anticancer chemotherapy," ABSTRACT, <i>Acta Biochem. Pol.</i> , 42(4):381-393, 1995
	C16	Khac and Moreau, "Interactions between fluoroquinolones, Mg <sup>2+</sup> , DNA and DNA gyrase, studied by phase partitioning in an aqueous two-phase system and by affinity chromatography," <i>J. of Chromatography A</i> , 668:241-247, 1994.
	C17	Kim <i>et al.</i> , "Specific association of human telomerase activity with immortal cells and cancer," <i>Science</i> , 266:2011-2015, 1994.
	C18	Laughlan <i>et al.</i> , "The high-resolution crystal structure of a parallel-stranded guanine tetraplex," <i>Science</i> , 265:520-524, 1994.
	C19	Lecomte and Chenon, "NMR investigation of pefloxacin/cation/DNA interactions. Mg <sup>2+</sup> and Ca <sup>2+</sup> Binding," <i>Intl. J. of Pharmaceutics</i> , 139:105-112, 1996.

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	C20	Lecomte <i>et al.</i> , "Effect of magnesium complexation by fluoroquinolones on their antibacterial properties," <i>Antimicrobial Agents and Chemotherapy</i> , 38(12):2810-2816, 1994.
	C21	Lecomte <i>et al.</i> , "NMR investigation of pefloxacin-cation-DNA interactions: the essential role of Mg <sup>2+</sup> ", <i>Intl. J. of Pharmaceutics</i> , 164:57-65, 1998.
	C22	Lecomte <i>et al.</i> , "NMR investigation of pefloxacin-cation-DNA interactions," 1995.
	C23	Llorente <i>et al.</i> , "Using SAR and QSAR analysis to model the activity and structure of the quinolone-DNA complex," <i>Bioorganic &amp; Medicinal Chem.</i> , 4(1):61-71, 1996.
	C24	Martinez <i>et al.</i> , "Effect of magnesium and calcium complexation on the photochemical properties of norfloxacin," <i>Photochemistry and Photobiology</i> , 64(6):911-917, 1996.
	C25	Norton <i>et al.</i> , "Inhibition of human telomerase activity by peptide nucleic acids," <i>Nature Biotechnology</i> , 14:615-619, 1996.
	C26	Palmer <i>et al.</i> , "Potential antitumor agents. 54. Chromophore requirements for in vivo antitumor activity among the general class of linear tricyclic carboxamides," <i>J. Med. Chem.</i> , 31:707-712, 1988.
	C27	Parkinson, "Do telomerase antagonists represent a novel anti-cancer strategy?" <i>Brit. J. Cancer</i> , 73:1-4, 1996.
	C28	Perry <i>et al.</i> , "1,4- and 2,6-disubstituted amidoanthracene-9,10-dione derivatives as inhibitors of human telomerase," <i>J Med. Chem.</i> , 41(17):3252-3260, 1998.
	C29	Perry <i>et al.</i> , "Human telomerase inhibition by regiosomeric disubstituted amidoanthracene-9,10-diones," <i>ABSTRACT, J. Med. Chem.</i> , 41(24):4873-4884, 1998.
	C30	Rodighiero <i>et al.</i> , "Angular furoquinolinones, psoralen analogs: novel antiproliferative agents for skin diseases. Synthesis, biological activity, mechanism of action, and computer-aided studies," <i>J. Med. Chem.</i> , 39:1293-1302, 1996.

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	C31	Ross and Riley, "Physicochemical properties of the fluoroquinolone antimicrobials. III. Complexation of lomefloxacin with various metal ions and the effect of metal ion complexation on aqueous solubility," <i>Intl. J. of Pharmaceutics</i> , 87:203-213, 1992.
	C32	Ross and Riley, "Physicochemical properties of the fluoroquinolone antimicrobials. II. Acid ionization constants and their relationship to structure," <i>Intl. J. of Pharmaceutics</i> , 83:267-272, 1992.
	C33	Salazar <i>et al.</i> , "Thermally induced DNA:RNA hybrid to G-quadruplex transitions: possible implications for telomere synthesis by telomerase," <i>Biochemistry</i> , 35:16110-16115, 1996
	C34	Sen and Gilbert, "A sodium-potassium switch in the formation of four-stranded G4-DNA," <i>Nature</i> , 344(6265):410-414, 1990.
	C35	Sun <i>et al.</i> , "Inhibition of human telomerase by a G-quadruplex-interactive compound," <i>J. Med. Chem.</i> , 40(14):2113-2116, 1997.
	C36	Tanious <i>et al.</i> , "Substituent position dictates the intercalative DNA-binding mode for anthracene-9,10-dione antitumor drugs," <i>Biochemistry</i> , 31:11632-11640, 1992.
	C37	Wang <i>et al.</i> , "Guanine residues in d(T <sub>2</sub> AG <sub>3</sub> ) and d(T <sub>2</sub> G <sub>4</sub> ) form parallel-stranded potassium cation stabilized G-quadruplexes with anti glycosidic torsion angles in solution," <i>Biochemistry</i> , 31:8112-8119, 1992.
	C38	Weitzmann <i>et al.</i> , "The development and use of a DNA polymerase arrest assay for the evaluation of parameters affecting intrastrand tetraplex formation," <i>J. Biol. Chem.</i> , 271(34), 20958-20964, 1996.
	C39	Wentland <i>et al.</i> , "Mammalian topoisomerase II inhibitory activity of 1-cyclopropyl-6,8-difluoro-1,4-dihydro-7-(2,6-dimethyl-4-pyridinyl)-4-oxo-3-quinolinecarboxylic acid and related derivatives," <i>J. Med. Chem.</i> , 36:2801-2809, 1993.
	C40	Yamakuchi <i>et al.</i> , "New quinolones, ofloxacin and levofloxacin, inhibit telomerase activity in transitional cell carcinoma cell lines," ABSTRACT, <i>Cancer Letters</i> , 119(2):213-219, 1997.
	C41	Zahler <i>et al.</i> , "Inhibition of telomerase by G-quartet DNA structures," <i>Nature</i> , 350:718-720, 1991.

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October 20, 2004

## CERTIFICATE OF MAILING 37 C.F.R 1.8

I certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

October 20, 2004

Date

Michael R. Krawzsenek

## MS AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Re: *U.S. Patent Application No.10/775,818 entitled "INHIBITION OF HUMAN TELOMERASE BY A G-QUADRUPLEX-INTERACTION COMPOUND" by Sean M. Kerwin et al.*  
*Our Reference: UTSB:679USC2*

Sir :

Enclosed for filing in the above-referenced patent application is an Information Disclosure Statement and Form PTO-1449.

No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to the enclosed materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/UTSB:679USC2.

Please date stamp and return the enclosed postcard evidencing receipt of these materials.

Respectfully submitted,

  
Michael R. Krawzsenek  
Reg. No. 51,898

MRK/kmv  
Encl.: as noted

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